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Dislocation in English

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The assumption that preposed and postposed constituents occupy a hierarchically distinguished, typically clause-external, position is common to virtually all current syntactic theories. In particular, most accounts of information questions locate the main constituent break in an example like *Who should Allen meet?* between *who* and *should Allen meet.*[1] Similarly, treatments of rightward displacements such as Right Node Raising standardly analyze the postposed element as occupying a position adjoined to S.[2] A variety of analyses likewise segment a polar question such as *Has the salt dissolved?* into the primary constituents *has* and *the salt dissolved*, thereby assigning the inverted auxiliary hierarchical superiority over the subject and other material contained within the clausal remnant *the salt dissolved.*[3]

An alternative and, I will suggest, superior analysis of dislocation structures in English is presented in earlier descriptivist accounts, which did not as a rule distinguish the hierarchical structure of interrogative and declarative sentences. Unlike contemporary descriptions, the treatment of polar questions in Hockett 1958 and Gleason 1955 associates isomorphic structural analyses with sentence pairs like *The salt has dissolved* and *Has the salt dissolved?*. Both sentences are segmented into the immediate constituents *the salt* and *has dissolved*, and distinguished with respect to intonation and the relative order assigned to the subject and finite auxiliary. Gleason 1955 proposes a similar subject/predicate analysis for information questions, recognizing *what...for* as a discontinuous syntactic constituent in *What are you looking for?*. I will argue that the constituent analyses assigned by these accounts provides a direct and elegant explanation for certain salient

*This paper is an abridged and somewhat revised version of Chapter 7 of Blevins 1990.

[1]See, among others, Bresnan and Kaplan 1982, Chomsky 1981, Gazdar *et al.* 1985, Steedman 1985.

[2]See, e.g., Bresnan 1974, Ross 1967, Gazdar 1981, Saito 1986.

[3]See Gazdar *et al.* 1982, Chomsky 1986.

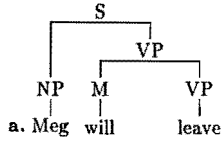
properties of English dislocation structures. In particular, an examination of the configurational domains to which anaphoric and extraction processes are sensitive suggests that initial *wh*-phrases, postposed constituents, and, by extension, auxiliaries, do not occupy a dislocated sentence-external hierarchical position.

1 Auxiliary Inversion

While generative descriptions of declarative/interrogative alternations are highly variable, nearly all accounts have assumed that the constituent structure of questions differs from the structure of the corresponding declaratives. In particular, generative analyses canonically associate a polar question like (1b) with a constituent structure in which the initial auxiliary *will* occupies a higher position than in the corresponding declarative in (1a).

1 a. Meg will leave.
b. Will Meg leave?

Katz and Postal 1964, for example, adopt a flattening inversion transformation that maps the underlying phrase marker (2a) into the derived phrase marker represented in (2b).[4]

2 a.


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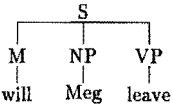


This singulary transformation preposes an auxiliary element and daughter-adjoins it, along with the verb in this example, under S.

The Subject-Aux Inversion metarule proposed in Gazdar *et al.* 1985 (henceforth GKPS) induces a similar structural distinction between declarative clauses, which are assigned a binary analysis into noun and verb phrases, and ternary-branching polar questions. The GKPS rule, repeated in (3), expresses a relation between immediate dominance rules that introduce verb phrases and those that sanction inverted sentences. For every ID rule that rewrites a verb phrase V^2[-SUBJ] by a string (or multiset) W, there is a corresponding rule that admits an inverted clause V^2[+INV,+SUBJ] consisting of W, along with a subject NP and an invertible auxiliary element.

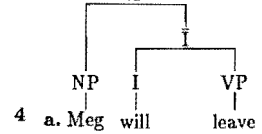
[4] These diagrams supress the triggering Q morpheme posited by Katz and Postal.

3 $V^2[\text{-SUBJ}] \rightarrow W \Longrightarrow V^2[\text{+INV,+SUBJ}] \rightarrow W, NP$

The order of the elements introduced by the derived rule is then determined by the appropriate LP rules.

Likewise, while the structural analyses proposed within many current REST accounts are uniformly (or at least maximally) binary branching, such accounts associate distinct hierarchical structures with the sentences in (1). Thus, in Chomsky 1986, the modal *will* occurs as the head of an inflectional phrase in (1a), but in the head position of the superordinate complementizer phrase in (1b). Illustrative structures associated with the sentences in (1) are provided in (4).[5]

4 a.



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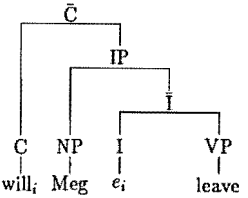
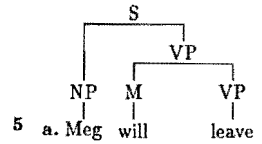


A rather different characterization of the alternation in (1) is suggested in the work of American structuralists such as Hockett 1958 and Gleason 1955. While the IC diagrams they propose for declarative sentences are structurally similar to the representation in (2a), the analyses assigned to interrogatives like (1b) cannot be expressed as wellformed continuous trees, stringsets or labelled bracketings. However, the discontinuous structure associated with polar questions is unambiguously representable in terms of graphs like (5b).

5 a.



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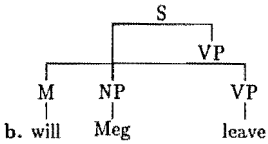

Unlike the later transformational analyses, the descriptions in (5) confine the structural difference between polar questions and declaratives to the

[5]For a fuller exposition of this analysis, see Chomsky 1986. No position is taken here concerning various unresolved issues having to do with the status of the maximal CP projection in (4b) and the presence or absence of a complementizer projection in (4a), as these matters have no direct bearing on the questions under discussion.

linear ordering of constituents. The binary hierarchical arrangement of constituents remains constant across these different sentence types, while the order of the subject and auxiliary element varies.

2 Nominal Preposing and Postposing

There are, however, few grammatical processes that provide a reliable diagnostic for the hierarchical position of verbal elements. The distinct constituent structures proposed for polar questions in (2)–(5) are thus, to a large extent, reflexes of conflicting views of phrase and clause structure that are not susceptible of direct verification. The situation is perhaps somewhat more tractable in the case of word order alternations involving nominals, where essentially the same range of options arise. Thus, consider an embedded information question like *who Sid saw* in (6).[6]

6 Helga wondered who Sid saw.

The space of possible structural analyses for this complement is largely the same as for the polar question in (1b). Counterparts of the candidate analyses discussed in (4) and (5) above are given in (7).

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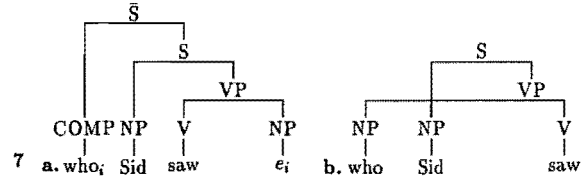


The REST structural description in (7a) is similar, modulo node labels, to the analysis of the inversion structure in (4b). Moreover, this representation is also isomorphic to the constituent structures assumed within current versions of LFG (Kaplan and Bresnan 1982) and GPSG (GKPS 1985). The structuralist alternative in (7b) has few contemporary advocates, though it is a straightforward generalization of McCawley's 1982 treatment of bounded rightward dependencies.[7]

[6]The choice of a subordinate construction allows us to ignore complications related to the application of auxiliary inversion in matrix questions.

[7]The remaining possibility, namely a ternary-branching counterpart of (2c), is most plausibly associated with flat 'predicate-argument' grammatical models, like Case Grammar or models of Relational and Arc Pair Grammar.

These distinct structural descriptions interact with a number of syntactic processes in English that are conditioned by, or at least significantly correlated with, configurationally defined domains. In particular, the principles of construal that determine the possible antecedents for a given pronominal, and certain of the island constraints that restrict the displacement of noun phrases seem sensitive to hierarchical relations. The discussion of island constraints will focus mainly on constraints on displacement from within noun phrase constituents. Since these are subject to somewhat less idiosyncratic and cross-linguistic variability, they are more plausibly attributed to structural causes than other putatively configurational conditions.

The basic line of argumentation pursued in subsequent sections takes as a point of departure the premise that a characterization of anaphoric construal and extraction islands that makes essential reference to configurational domains can provide a diagnostic for constituent structure. In particular, an account developed to deal with anaphora and extraction in clauses that have not undergone a given movement rule can be applied to clauses which have undergone the rule in order to determine whether the alternation ascribed to the rule in question affects configurational domains. More specifically, structure-sensitive phenomena can be used to probe the hierarchical arrangement of sentences like those in (8) below.

8 a. Who did Helga deny that Sid saw?
  b. A rumour spread quickly that Olga had emigrated.
  c. Ken believes, but Gus doubts, that alligators eat dogs.

Example (8a) is an instance of an unbounded dependency construction, in which the interrogative object *who* has been preposed to sentence-initial position. In contrast, the sentences in (8b) and (8c) illustrate bounded, rightward displacements. (8b) involves extraposition of the sentential complement *that Olga had emigrated* from the subject noun phrase, while (8c) is a case of what Ross 1967 terms Right Node Raising.

The principal question addressed below is whether such nominal displacements preserve or alter the configurationally defined domains to which anaphora and extraction phenomena are sensitive. Let us turn now directly to an examination of the interaction of the structural descriptions in (7) with anaphoric and extraction processes in English.

3 Bound Anaphora

In English, as in many other languages, subjects and direct objects of active transitive predicates exhibit asymmetric anaphoric options. The sentences in (9) illustrate the familiar contrast between subjects and objects with respect to the control of reflexives. Whereas any suitable subject noun phrase in subject position can control reflexive objects, direct objects cannot control reflexive subjects.[8]

9 a. Kim$_i$ nominated herself$_i$.
  b. *Herself$_i$ nominated Kim$_i$.

This asymmetry is commonly ascribed to the structural difference between subjects and objects in traditional subject/predicate constituent analyses of English clause structure. Configurational approaches to anaphora define the anaphoric domain of a potential antecedent in terms of its position on a phrase structure tree, and attribute the asymmetric anaphoric options of subjects and objects to the fact that subjects are attached higher than objects in a constituent structure tree. For ease of reference, let us adopt Reinhart's antecedent-oriented terminology and identify the set of nodes dominated by the mother of a node α as the *c-command* domain of α. Moreover, α will be said to *c-command* any node within that domain.

10 α *c-commands* β iff (i) neither α nor β dominates the other, and (ii) every branching node that properly dominates α dominates β.

The contrast between (9a) and (9b) follows then from a requirement that the antecedent of a bound reflexive must be higher than the reflexive. Moreover, as was recognized by Evans 1977 and Partee 1978, among others, a formally similar constraint applies to quantificational antecedents. Noun phrases containing the determiners *every*, *no*, etc. must generally occur higher in a structure than any pronominal that is construed as dependent on them. Violation of this requirement typically results in ungrammaticality, as (11) illustrates.

11 a. No suspect$_i$ trusts his$_i$ lawyer.
  b. *His$_i$ lawyer trusts no suspect$_i$.

[8]The asterisk diacritic is intended to mark grammaticality on the anaphoric reading informally represented by coindexing.

Example (11a) shows that quantificational noun phrases that occur as subjects may antecede possessive pronouns embedded within a direct object. Yet, as (11b) indicates, possessive pronouns embedded within the subject cannot be construed as anaphoric to a quantificational object.

Notice that a unified account of the contrasts in (9) and (11) can be obtained if reflexive pronouns and quantificational noun phrase antecedents are classified as elements that participate only in bound variable anaphoric dependencies, and hierarchical superiority is identified as a necessary condition for such anaphora.[9] These assumptions provide a clear diagnostic for the structural position of a displaced nominal, since the nominal should be able to antecede any pronouns dominated by its mother node.

3.1 Binding in Interrogatives

Examples (12a) and (12b) show that the interrogative quantifier *who* may serve as an antecedent for object reflexives and pronouns embedded within the object when the quantifier occurs (or, alternatively, originates) in subject position.

12 a. Who$_i$ incriminated himself$_i$?
b. Who$_i$ called his$_i$ lawyer?

This pattern is expected on nearly any account, as *who* will c-command the reflexive and possessive pronoun when it occupies either subject position or a higher dislocated initial position. However, the anaphoric options of an interrogative matrix object or embedded subject presents a useful test case for competing hypotheses about derived constituent structure. An account that assigns a uniformly right-branching structure to English questions will, in the absence of supplementary restrictions, lead one to expect preposed objects and subjects to c-command, and hence antecede, the pronominals that they precede. In contrast, an analysis that associates typically isomorphic structural analyses with questions and declaratives will predict that preposing should not affect the anaphoric domain of an object or embedded subject.

3.1.1 Cross-Over Phenomena

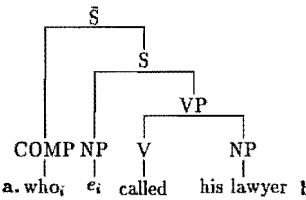
As examples (13a) and (13b) show, interrogative object quantifiers pattern straightforwardly after their noninterrogative counterpart in (11b).

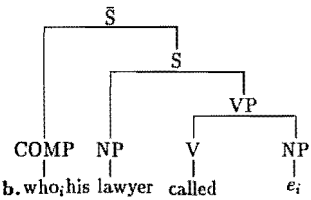
[9] This is essentially the position defended in Partee 1978, Reinhart 1983 and Blevins 1989; see these works for further discussion.

13 a. *Who$_i$ did himself$_i$ incriminate?
b. *Who$_i$ did his$_i$ lawyer represent?
c. *Who$_i$ did he$_i$ think would call?

Although *who* precedes *himself* and *his* in these examples, it cannot be interpreted as the antecedent of either pronominal. The fronted subject in (13c) is similarly unable to antecede the following subject *he*.[10] Nonetheless, on conventional generative assumptions about the derived constituent structure of matrix questions, the contrast between (12) and (13) cannot be attributed directly to the structural differences that were invoked to distinguish (9a) from (9b) and (11a) from (11b). This can be seen by comparing, for example, the REST structural descriptions in (15) for the embedded *wh*-questions in (14).[11]

14 a. who$_i$ called his$_i$ lawyer
b. *who$_i$ his$_i$ lawyer called

15 a.


b.


The respects in which these structures differ from their current REST counterparts have to do mainly with node labelling conventions and are not pertinant to the present discussion. What is essential is just that dislocated subject and object interrogatives uniformly occupy a hierarchically superior sentence-initial position.

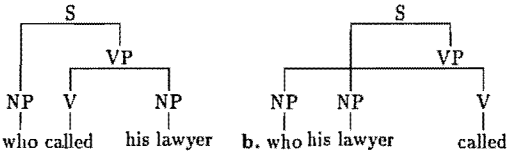
Analyses of the sort exemplified in (15) clearly place both subject and object pronouns within the anaphoric domain of an initial interrogative noun

[10]Examples of the sort illustrated in (13) are cases of what, following Postal 1971, have come to be known as *crossover* violations. (13b) is often characterized as a 'weak' violation, in contrast to the 'strong' case in (13c): the diacritic '*?' is commonly pressed into service as a means of associating a deviance between marginality and illformedness to cases of 'weak' crossover. However, given the clear ungrammaticality of (13b), there seems to be no intelligible sense in which (13c) can be described as a stronger violation, or as a less grammatical construction.

[11]Subordinate clauses are chosen again to abstract away from complications introduced by auxiliary inversion.

phrase. Thus, in order to prevent the subject in (14b) from being interpreted as anaphoric to the preposed interrogative object, additional constraints must be invoked. A variety of restrictions have been proposed in the literature, ranging from Postal's 1971 prohibition against extracting a noun phrase past an anaphoric pronoun, through the directionality and biuniqueness conditions on binding proposed in Chomsky 1976, Higginbotham 1980 and Koopman and Sportiche 1982. However, these proposals are each essentially corrective in nature, as they attempt to block an anaphoric construal that is expected on standard structural analyses. Thus, the basic assumption that *wh*-questions instantiate a continuous, right-branching derived constituent structure not only necessitates supplementary constraints, but also obscures the generalization that subjects may control reflexive objects and bound pronouns that occur within the object, while objects cannot antecede reflexive subjects and bound pronouns within the subject.

On the other hand, a unified account of the contrasts noted above can be provided if the structural descriptions assigned to *wh*-questions are isomorphic to those associated with the counterpart declaratives. That is, if sentence-initial interrogative elements are not uniformly assumed to c-command the rest of a clause, objects will invariably occur in the anaphoric domain of subjects, while subjects remain outside of the anaphoric domain of objects. The structural differences that determine the distinct anaphoric options in the subordinate clauses in (14) are illustrated in the descriptions in (16).



16 **a.** who called his lawyer **b.** who his lawyer called

Just as in declaratives, the subjects of these clauses asymmetrically c-command direct objects, which accounts for their characteristically different anaphoric options.

3.1.2 Connectedness Effects

The structures in (15) and (16) make certain other divergent predictions. In particular, they lead to differing expectations about which nominals can antecede a pronominal contained within a preposed constituent. According

to the constituent analyses in (15), a genitive pronoun or reflexive should fall outside of the anaphoric domain of the noun phrases it precedes. In contrast, the descriptions in (16) predict subject/object asymmetries parallel to those above. A pronoun within a preposed subject should remain outside of the domain of a quantificational object, while a pronoun within a preposed object should be able to select a following subject antecedent. The examples in (17) below indicate that pronouns within preposed interrogative objects can be construed as anaphoric to quantificational subjects, while pronouns in interrogative subjects cannot be interpreted as dependent on quantificational objects.

17 a. Which of his$_i$ animals would no zookeeper$_i$ eat?
b. Which rumour about himself$_i$ did each candidate$_i$ disparage?
c. *Which of his$_i$ animals would eat no zookeeper$_i$?
d. *Which rumour about himself$_i$ disparaged each candidate$_i$?

Notice that the problem that (17a) and (17b) present is roughly complementary to the difficulties raised by the sentences in (13). Whereas the latter examples are unexpectedly ungrammatical, those in (17a) and (17b) are unexpectedly wellformed. Thus, most of the supplementary principles that exclude anaphoric dependencies in (13) cannot be used to sanction the admissible anaphora in (17).

Moreover, just as (13a) and (13b) have declarative counterparts, the anaphoric options of the subjects and objects in (17) mirror those of the corresponding declarative sentences in (18).

18 a. No zookeeper$_i$ would eat any of his$_i$ animals.
b. Each candidate$_i$ disparaged some rumour about himself$_i$.
c. *None of his$_i$ animals would eat any zookeeper$_i$.
d. *Some rumour about himself$_i$ disparaged each candidate$_i$.

These examples reinforce the descriptive generalization that subjects may bind objects and bind into objects, while the converse is not generally possible. Yet, in order to assign uniform hierarchical superiority to subjects in English, the familiar continuous right-branching analysis of questions must be abandoned in favour of structures in which a preposed constituent may precede nodes that c-command it. The structures in (19) and (20), corresponding to the minimal pair in (17a) and (17c), are representative in perspicuously representing the operative structural subject/object asymmetry.

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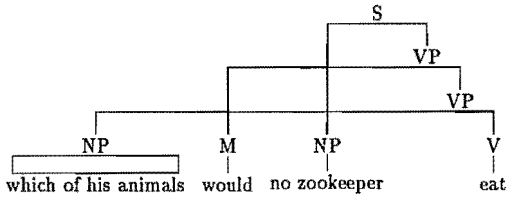

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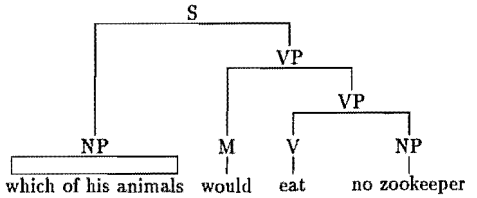

4 Island Preservation

However, the relaxation of familiar constraints on phrase structure is only one of a number of available alternatives. Any account that assigns multiple structural descriptions to a sentence can identify some structure other than the derived surface structure as the level at which configurational constraints on bound anaphora must be satisfied. In particular, a transformational analysis that nominates an underlying structure at which interrogatives occur *in situ* as the operative level will be able to account for the contrasts in (5)–(14). This position is most explicitly advocated in van Riemsdijk and Williams 1981, who identify their NP-structure as the relevant level, though for the class of cases discussed above, a conventional d-structure would do as well. Another strategy pursued in the transformational literature involves undoing the effects of movement, and 'reconstructing' the underlying constituent structure at an ostensibly syntactic level derived from the surface structure.

It seems reasonable to require that theories that invoke discrete, fully articulated levels should provide motivation for each of the distinct relations represented on such structures. Both a discontinuous and transformational account appeal to d-structure constituent structure to account for bound anaphora. Similarly, both recognize s-structure word order. However, they differ in that the transformational account also posits an underlying word

order and a derived surface constituent structure that the discontinuous analysis does not countenance. There appear, moreover, to be empirical consequences of positing a derived constituent structure, even if it is effectively ignored for the purposes of determining anaphoric construal.

4.1 The Complex Noun Phrase Constraint

Like anaphoric domains, definitions of extraction islands typically refer exclusively or principally to constituent structure configurations. The Complex NP Constraint (CNPC) of Ross 1967 is representative in this regard, as it bars extraction of a constituent from a sentence dominated by an internally complex noun phrase, without referring to the linear position of the extracted constituent within the dominating phrase. This prohibition is intended to account for contrasts of the sort illustrated in (21) and (22) below.

21 a. Max heard a rumour that Felix bought a viper.
b. *What did Max hear a rumour that Felix bought?

22 a. Phil met a woman who climbed Mount Everest.
b. *What did Phil meet a woman who climbed?

The ungrammaticality of (21b) is attributed to the fact that *what* is extracted from the sentential complement to the noun *rumour*. Similarly, the illformedness of (22b) is ascribed to the fact that *what* has been extracted from within a relative clause.

Extraction from a complex noun phrase in subject position is equally illformed, as the examples in (23) and (24) show.

23 a. A rumour that Stalin denounced Marr spread quickly.
b. *Who did a rumour that Stalin denounced spread quickly?

24 a. The firemen who rescued the lizard perished.
b. *What did the firemen that rescued perish?

(23b) is another instance of extraction from the sentential complement of a noun, while (24b) is the corresponding example involving movement from a relative clause.

4.1.1 Extraction and Extraposition

As Ross recognizes, this constraint interacts with the analysis of bounded rightward movement rules in English that postpose a heavy clausal constituent. Consider, for example, the rule of Extraposition from NP, illustrated in (25) and (26).

25 a. Lois heard a report that Stalin denounced Marr today.
b. Lois heard a report today that Stalin denounced Marr.

26 a. Ned found an economist who speaks Georgian yesterday.
b. Ned found an economist yesterday who speaks Georgian.

The examples in (25b) and (26b) involve extraposition of clausal material from the object NPs past the temporal adverbials *today* and *yesterday*. Similarly, the result of extraposing the sentential complement and relative clauses from the subjects in (23a) and (24a) is given in (27).[12]

27 a. A rumour spread quickly that Stalin denounced Marr.
b. The firemen perished who rescued the lizard.

Ross formulates extraposition as an operation that moves the complement or relative clause out of the dominating NP to a Chomsky-adjoined position dominated by S. The principal modification introduced in subsequent transformational accounts concerns the presence of a 'trace' in the extraction site. Thus, Stowell 1981 and Rochemont 1986 assign the structure in (28) to a sentence like (27).

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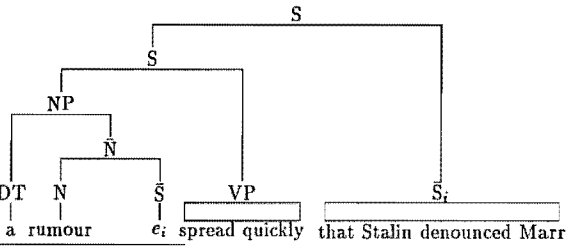


[12]It may be significant that the verbs in these examples pattern to some degree with unaccusatives.

As Ross acknowledges, the CNPC does not prohibit extraction from such extraposed sentential complements and relative clauses. In particular, the illformedness of the questions in (29), corresponding to the declaratives in (27), cannot be attributed to the CNPC, since the extraction site of *who* and *what* no longer occurs within an NP constituent.

29 a. *Who did a rumour spread quickly that Stalin denounced?
b. *What did the firemen perish that rescued?

Thus the standard transformational analysis of extraposition deprives us of a unified account of the illformedness of the examples in (29) and their counterparts in (23b) and (24b). Moreover, while the CNPC accounts for the ungrammaticality of the sentences in (30), it does not extend to cover those in (31).

30 a. *Who did Lois hear a report that Stalin denounced today?
b. *What did Ned find an economist who speaks yesterday?

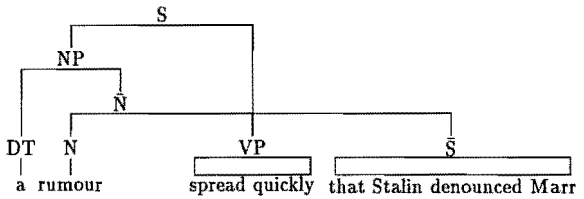
31 a. *Who did Lois hear a report today that Stalin denounced?
b. *What did Ned find an economist yesterday who speaks?

Although additional mechanisms and constraints can be invoked to rule out the examples in (31), an account that appeals to such supplementary conditions appears to be missing the relatively clear descriptive generalization that extraction from an internally complex noun phrase yields an ungrammatical result.[13]

In contrast, as McCawley 1982:98 notes, a unified account of the ungrammaticality of questions like those in (21)–(31) follows directly if Extraposition from NP is characterized as a permutation that preserves constituent structure, since then the offending sentences will all be classed as illformed by the CNPC. A candidate structure is provided in (32).[14]

[13]Baltin 1984 argues that extraction from extraposed NPs is generally illformed, irrespective of whether the NP originates in a complex noun phrase. However, Huck and Na 1990 observe that the acceptability of extracting from extraposed NPs that do not originate in a complex noun phrase is dependent on focus structure and discourse context, in contrast to CNPC effects, which are largely unaffected by contextual factors.

[14]A similarly discontinuous analysis of extraposition structures is informally suggested by Halliday 1961.



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If the extraposed sentences above are assigned a discontinuous structure in which the postposed elements remain within a noun phrase constituent, the CNPC will uniformly block extraction.

4.1.2 Right Node Raising

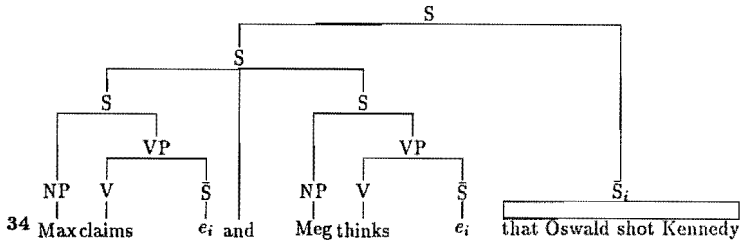
Again, there is a variety of options that do not require the relaxation of constraints on the representation of phrase structure. Specifically, the illformedness of extraction from extraposed sentential constituents can be treated as a CNPC violation if leftward *wh*-movement must obligatorily precede extraposition from NP. Alternatively, the adjoined position of an extraposed clause can be declared an island; in the best case for reasons similar or identical to those that are responsible for the islandhood of complex noun phrases. Another strategy would involve blocking extraction from extraposed clauses as a consequence of an analogue of Ross' Frozen Structure Constraint, or the more general freezing principle of Wexler and Culicover 1980, which prohibits a transformational rule from applying to constituents that have already been dislocated by a movement rule. Notice, however, that these latter analyses differ in at least one essential respect from McCawley's discontinuous account. Whereas McCawley attributes the ungrammaticality of sentences like those in (24) to the fact that a reordering rule preserves islandhood, either of the transformational alternatives would ascribe the illformedness of these examples to the fact that a movement rule gives rise to a syntactic island. Although it is difficult to construct a test case involving extraposition that will clearly distinguish these accounts, the interaction of extraction with rules like Right Node Raising provides a useful means of teasing apart the divergent predictions that they make.

The rule of Right Node Raising (RNR), as formulated by Ross 1967 and Bresnan 1974, deletes identical subconstituents within a coordinate construction, and Chomsky-adjoins a copy of the deleted constituent to the matrix S node. More recent variants, e.g. Saito 1986, likewise classify the

output of this rule as an adjunction structure, though, to satisfy the Projection Principle of Chomsky 1981, they typically posit traces in the former deletion sites. A representative example of RNR is provided in (33); (34) gives the associated structural description.

33 Max claims, and Meg thinks, that Oswald shot Kennedy.

34



There are numerous inessential features of this diagram. In particular, the syncategorematic status of the conjunction, the presence of the traces and their syntactic category are all immaterial.

What is relevant is just that the raised clause occupies an adjoined, or at least nonargument position according to this analysis. Notice that the clausal complement in the adjoined structure in (34) occurs in the same configuration as the extraposed complement in (23). Thus, if rightward movements invariably create islands, extraction from the raised clause in (33) should be blocked. As the wellformed example in (35) shows, however, this is not the case.

35 Who does Max claim and Meg believe that Oswald shot?

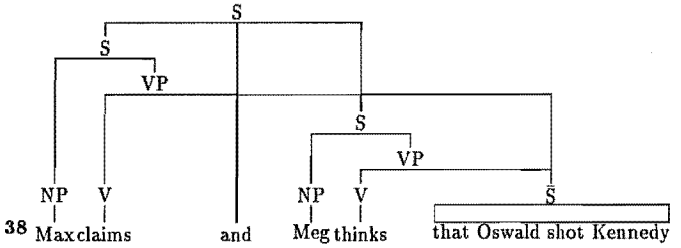
The contrast between (35) and the ungrammatical (29a) is unexpected if rightward movements either induce 'freezing' or create island configurations.

On the other hand, this contrast is predicted, if preservation of islandhood or nonislandhood is taken to be characteristic of rightward movement displacements. Just as the illformedness of the extraposed (29a) is correlated with the ungrammaticality of (23b), in which extraposition has not applied, the grammaticality of (35) can be attributed to the fact that each of the conjuncts allow extraction of their direct object. This is shown by the examples in (36) and (37).

36 a. Max claims that Oswald shot Kennedy.
b. Who does Max claim that Oswald shot?

37 a. Meg believes that Oswald shot Kennedy.
b. Who does Meg believe that Oswald shot?

The preservation of extraction domains follows directly on the structural analysis assigned by McCawley to sentences like (35).



38

Since the embedded object is not dominated by any higher NP node, its extraction is not prohibited by the CNPC; nor, in this case, by any other condition. Hence the result of preposing the object, as in (35), is correctly predicted to be wellformed.

In order to distinguish (29a) from (35), a transformational account could again resort to extrinsic ordering of leftward and rightward movement rules. Alternatively, a difference in derived structure can be associated with the contrasting sentences. However, any strategy that simply differentiates the output of extraposition and RNR in some manner will obscure the generalization that is directly expressed by McCawley's account; namely that the islandhood of a conjoined sentence depends on whether the conjunct clauses contain islands. Further, failure to capture this generalization leads to descriptive inadequacy, as well as inelegance. Specifically, an account that treats the output of extraposition as an island, while classifying the configuration defined by RNR as a nonisland will be unable to account for the complex pattern that results from the interaction of RNR, the CNPC and extraction.

Recall that the CNPC prohibits extraction from sentential complements and relative clauses dominated by NP. In particular, it accounts for the contrast between the declaratives in (39) and the corresponding questions in (40).

39 a. Meg heard a rumour that Len believes Oswald shot Kennedy.
b. Meg knows a man who thinks that Oswald shot Kennedy.

40 a. *Who did Meg hear a rumour that Len believes Oswald shot?
b. *Who does Meg know a man who thinks that Oswald shot?

Moreover, the embedded clauses in (39) can be embedded within a RNR construction.

41 a. Max claims, and Meg heard a rumour that Len believes, that Oswald shot Kennedy.
b. Max claims, and Meg knows a man who believes, that Oswald shot Kennedy.

However, questioning the raised constituents in (41) leads to ungrammaticality, as the sentences in (42) show.

42 a. *Who did Max claim, and Meg hear a rumour that Len believes, that Oswald shot?
b. *Who does Max claim, and Meg know a man who believes, that Oswald shot?

The contrast between the examples in (35) and (42) suggests that the acceptability of extraction from a RNR construction cannot be straightforwardly keyed to the output configuration. If the output of RNR is classified as an island, (35) is incorrectly excluded; however, if the output of RNR is identified as nonisland, the questions in (42) are incorrectly predicted to be grammatical. Either way a misdiagnosis results.

The basic problem here is that a binary island/nonisland distinction applied to output configurations cannot satisfactorily record whether an extracted item was at some point contained within a complex NP. This island preservation is, however, an immediate consequence of the discontinuous representation assigned by McCawley. Since the multidominated subordinate clauses in (41) and (42), for example, remain within a complex noun phrase, extraction of the embedded object will violate the CNPC.

4.2 Configurational vs Derivational Constraints

Before concluding, let us briefly examine some possible transformational strategies for describing the pattern exhibited above. As suggested at various points in the discussion, the requisite distinction can be represented procedurally, in the form of extrinsic ordering conditions that require the application of rightward movement rules to follow unbounded leftward extraction. A more subtle variant of this sort of derivational account (suggested

to me by Edwin Williams) can be formulated by permitting free ordering of movement rules, and declaring the output of rightward movement rules to be island configurations. Like the previous rule ordering account, this analysis permits extraction just in case an element does not originate in an island. Thus, for example, elements that are base generated within complex NPs will be unextractable; movement from their base position will violate the CNPC, while movement from a rightward-dislocated surface position will run afoul of the restriction on extraction from the output of rightward movement rules. In contrast, elements that do not originate in a complex NP will be extractable, since nothing will bar movement when they occupy their base position.

Yet notice that this sort of account does not provide a unified analysis of the illformedness of the sentences in (30) and (31), given that the ungrammaticality of the examples in (31) would be due in part to the prohibition against extraction from extraposed constituents. Moreover, the conditions that exclude (31) must be interpreted as applying to derivational stages and hence cannot be formulated as general wellformedness conditions. The grammaticality of (35) depends on the fact that a derivation in which extraction of *who* precedes Right Node Raising of *that Oswald shot* does not violate either of the posited island constraints. However, this entails that the configuration that results from rightward movement of a sentential complement containing a 'gap' cannot be disallowed, since wellformed sentences like (35) may instantiate this pattern. Thus, the prohibition against extraction from rightward-dislocated constituents cannot be expressed as a constraint on representations. Further, while the CNPC can be stated as a representational constraint that applies straightforwardly to conventional s-structures associated with examples like (30), such a constraint must apply to an intermediate derivational stage of the examples in (31), since their s-structures will not preserve the offending configuration.

Consequently, excluding a simple example like (31a) requires a certain ineliminable amount of derivational 'bookkeeping' that records constraint violations that are not recoverable from the derived constituent structure of (31a). In sum, though such an account may, like an analysis that appeals to extrinsic ordering, describe the desired pattern, this success incurs the cost of abandoning the program of providing general configurational accounts of extractability. Further, in both cases it is no longer ordered sets of representations (possibly collapsed into a single annotated representation) that collectively characterize syntactic discontinuity, but rather sequences of such representations in conjunction with supplementary ordering constraints

or disjunctive wellformedness conditions. Moreover, this elaborate mechanism must be further articulated, ordering pronominal construal before any movement rule in order to account for the preservation of anaphoric domains under movement.

5 Conclusion

The preceding discussion suggests some empirical advantages of associating discontinuous constituent analyses with dislocation structures. Moreover, the phenomena discussed present a relatively clear demonstration that the properties of syntactically discontinuous structures cannot always be replicated by invoking an extended, cross-derivational notion of constituency. Recall that in the case of bound anaphora, it was possible to define configurational constraints on an underlying structure, or equivalently, to define expedient chain-binding algorithms that apply to annotated surface structures in such a way as to disregard inconvenient derived configurations.[15] However, in the examples above involving successive rightward and leftward movements, there is no obvious way of executing a similar strategem while retaining a declarative configurational account of extraction domains. Thus the interaction of preposing and postposing rules yields a sort of canonically discontinuous structure that cannot be simply reconstructed in terms of sets or sequences of continuous representations, providing confirmation of Chomsky's 1955:190 conjecture that some cases of discontinuity may ultimately have to be directly represented at the level of phrase structure.

[15]See especially Kayne 1983, Weisler 1983 and Barss 1986 for elaborations of the latter strategy. See also Blevins 1990:ch7 for a discussion of these procedures.

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